

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows.

1. (Currently Amended) An automatic caching method for a distributed application having a client and a server, comprising:
 - intercepting a call between the client and the server of the distributed application in order to collect information about objects accessed on the server during the call, wherein a first portion of the distributed application runs on the client and a second portion of the distributed application runs on the server, and wherein information is collected based on usage patterns of object attributes on the client;
 - prefetching data from an object on the server based on collected information;
 - placing data into a client cache;
 - synchronizing marked calls with the server; and
 - synchronizing the client cache with the server.
2. The automatic caching method of claim 1, further comprising:
 - invalidating the client cache at the end of an activity.
3. The automatic casting method of claim 1, further comprising:
 - storing data in a proxy for the object that is locally accessible to the client.
4. The automatic caching method of claim 3, wherein storing data in the proxy comprises creating the proxy from a proxy class.
5. The automatic caching method of claim 4, wherein creating the proxy comprises storing a reference to the proxy in the client cache.
6. The automatic caching method of claim 4, wherein creating the proxy comprises storing a reference to the object inside the proxy.
7. The automatic caching method of claim 5, further comprising:
 - invalidating the proxy at the end of an activity.
8. The automatic caching method of claim 5, further comprising:

partially invalidating the client cache at the end of an activity.

9. The automatic caching method of claim 1, further comprising:
invoking a method of the object in response to a request received by a proxy to invoke the method of the object.
10. The automatic caching method of claim 9, wherein invoking the method of the object comprises synchronizing data stored in the proxy with data in the object.
11. The automatic caching method of claim 1, wherein collected information comprises object attributes requested by the client during the call.
12. The automatic caching method of claim 1, wherein collected information comprises information for accessing an interface of the object.
13. (Currently Amended) An automatic caching method for a distributed application having a client and a server, comprising:
intercepting a call between the client and the server of the distributed application in order to collect information about objects accessed on the server during the call, wherein a first portion of the distributed application runs on the client and a second portion of the distributed application runs on the server, and wherein information is collected based on usage patterns of object attributes on the client;
prefetching data from an object on the server based on collected information;
placing data into a client cache;
synchronizing marked calls with the server;
synchronizing the client cache with the server;
invalidating the client cache at the end of an activity;
storing data in a proxy for the object that is locally accessible to the client; and
invoking a method of the object in response to a request received by the proxy to invoke the method of the object.

14. (Currently Amended) An automatic caching method for an existing distributed application having a client and a server, comprising:
- interposing a runtime between the client and the server which intercepts a call between the client and the server, the runtime having a capability to create a proxy for an object on the server, wherein a first portion of the distributed application runs on the client and a second portion of the distributed application runs on the server;
 - collecting information about the object accessed by the client during an activity, wherein information is collected based on usage patterns of object attributes on the client;
 - prefetching data from the object based on collected information; and
 - storing data in the proxy for the object that is locally accessible to the client.
15. The automatic caching method of claim 14, wherein collected information comprises object attributes accessed by the client during an activity.
16. The automatic caching method of claim 14, wherein interposing the runtime between the client and the server comprises instrumenting the client such that a request normally sent to the server is directed to the runtime.
17. The automatic caching method of claim 14, wherein the runtime has a client portion that runs in the same machine as the client and a server portion that runs in the same machine as the server.
18. The automatic caching method of claim 17, further comprising:
- sending a request to the server portion by the client portion to synchronize data stored in the proxy with data in the object.
19. The automatic caching method of claim 17, further comprising:
- sending a request to the server portion to invoke a method of the object on behalf of the proxy.
20. The automatic caching method of claim 19, further comprising:
- synchronizing data stored in the proxy with the data in the object by the server portion prior to invoking the method of the object.

21. (Currently Amended) An automatic caching system for a distributed application having a client and a server, comprising:

a client runtime interposed between the client and the server, the client runtime having a capability to intercept a call between the client and the server in order to insert a service for collecting information about objects accessed on the server during the call, wherein a first portion of the distributed application runs on the client and a second portion of the distributed application runs on the server, and wherein information is collected based on usage patterns of object attributes on the client;

means for prefetching data from the objects on the server based on collected information;
and

means for storing data fetched from the objects on the server in a memory locally accessible to the client.

22. The automatic caching system of claim 21, wherein the client runtime comprises a plurality of proxies for caching the data fetched from the server.

23. The automatic caching system of claim 22, wherein each of the proxies is associated with an object on the server.

24. The automatic caching system of claim 23, further comprising:

a server runtime interposed between the client runtime and the server which synchronizes data cached in the proxies with data in the objects.

25. (Currently Amended) A computer-readable medium having recorded thereon instructions executable by a processor, the instructions for:

intercepting a call between a client and a server, wherein a first portion of the distributed application runs on the client and a second portion of the distributed application runs on the server;

collecting information about an object accessed on the server during an activity, wherein information is collected based on usage patterns of object attributes on the client;

prefetching data from the object based on collected information; and

storing data in a proxy for the object that is locally accessible to the client.

26. The computer-readable medium of claim 25, further comprising:

instructions for creating the proxy from a proxy class.

27. The computer-readable medium of claim 26, further comprising:

instructions for obtaining a reference to the object and storing the reference in the proxy.

28. The computer-readable medium of claim 25, further comprising:

instructions for sending a request to the server to invoke a method of the object.

29. The computer-readable medium of claim 25, further comprising:

instructions for interposing the proxy for the object such that the client accesses the proxy instead of the object.

30. The computer-readable medium of claim 25, further comprising:

instructions for synchronizing data stored in the proxy with data in the object.

31. (Currently Amended) A computer-readable medium having recorded thereon instructions executable by a processor, the instructions for:

intercepting a call between a client and a server, wherein a first portion of the distributed application runs on the client and a second portion of the distributed application runs on the server;

collecting information about an object accessed on the server during an activity, wherein information is collected based on usage patterns of object attributes on the client;

prefetching data from the object based on collected information;

storing data in a proxy for the object that is locally accessible to the client;

creating the proxy from a proxy class;

obtaining a reference to the object and storing the reference in the proxy;

sending a request to the server to invoke a method of the object;

interposing the proxy for the object such that the client accesses the proxy instead of the object; and

synchronizing data stored in the proxy with data in the object.

32. (Currently Amended) An apparatus for a distributed application having a client and a server, comprising:

means for intercepting a call between the client and the server in order to collect information about objects accessed on the server during the call, wherein a first portion of the distributed application runs on the client and a second portion of the distributed application runs on the server, and wherein information is collected based on usage patterns of object attributes on the client;

means for prefetching data from an object on the server based on collected information;

means for placing data into a client cache;

means for synchronizing marked calls with the server; and

means for synchronizing the client cache with the server.